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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,539	01/08/2002	Manh-Quan Tam Nguyen	END920010064US1	5544

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EXAMINER

PALADINI, ALBERT WILLIAM

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/042,539	Applicant(s) NGUYEN, MANH-QUAN TAM	
	Examiner Albert W. Paladini	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/8/02</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The terms of table 1 are not explained and these tables are critical to map the reference points to the actual points. Rotation is expressed in the table as $D_x y/x$. Assuming that this means the partial derivative of the function y/x , with respect to x ; this may be shown to be:

$$\lim_{\Delta x \rightarrow 0} \frac{(y/x + \Delta x) - y/x}{\Delta x}$$

This expression is a limit at a single point, and does not express a rotation.

The meaning of the term "scaling" as it is used in this application is not explained. Scaling is normally used in maps to express the ratio of actual distance to that depicted on the map. This does not apply in this application.

The specification must explain how the variables used in equations 3 and 4 determine coefficients, which map reference, points (x_i, y_i) to actual points (x'_i, y'_i) on a panel.

Page 10 illustrates how the coefficients obtained are used in the equations. However, the terms are not defined and the translation is not explained using the geometrical terms commonly known in Cartesian coordinate systems. Therefore, equations 3 and 4 are viewed as some arbitrarily selected mapping function. Frequently, a second or higher order polynomial may be used to obtain a good fit between variables. If arbitrary functions are utilized in place of geometric axioms and logic, then the specification must demonstrate that dependent variables may be obtained with a prescribed accuracy from the independent variables.

Appropriate correction and clarification is required.

3. Claims 11-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 11

Claim 11 recites a single means "A computer program device readable by a machine, tangibly embodying a program of instructions executable by a machine to

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perform" followed by a list of desired objectives. There are no interactive elements, which act in concert to achieve the desired objectives. Thus, claim 11 is subject to an undue breadth interpretation. The MPEP states:

"2164.08(a) Single Means Claim

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim, which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor."

See also See In re Scarbrough, 500 F.2d 560, 565, 182 USPQ 298, 301-02 (CCPA 1974) ("It is not enough that a person skilled in the art, by carrying on investigations along the line indicated in the instant application, and by a great amount of work eventually might find out how to make and use the instant invention. The statute requires the application itself to inform, not to direct others to find out for themselves (citation omitted)."); Knowlton, 481 F.2d at 1367, 178 USPQ at 493 (disclosure must constitute more than a "sketchy explanation of flow diagrams or a bare group of program listings together with a reference to a proprietary computer on which they might be run"). See also In re Gunn, 537 F.2d 1123, 1127-28, 190 USPQ 402, 405 (CCPA 1976); In re Brandstadter, 484 F.2d 1395, 1406-07, 179 USPQ 286, 294 (CCPA 1973); and In re Ghiron, 442 F.2d 985, 991, 169 USPQ 723, 727-28 (CCPA 1971).

Appropriate correction and clarification is required.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Claim 1

The objective recites "A method of creating a mathematical model for determining at least one work location in a multi-layered panel". There are no steps which recite how this model is created. The claim recites, "said mathematical model employs an algorithm which considers" a number of factors followed by a recitation of what the algorithm is purported to accomplish. There are no actual sequential, logical steps, which recite how the mathematical model is created. The recitation is a narrative, which explains that some type of mathematical algorithm is employed, and that by somehow considering factors such as "rotation", "shrinkage", "stretching"; the algorithm facilitates: "accurate prediction of the work location".

6. Claims 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5

Step 5 recites, "measuring the location of said fiducial marks of said first circuitized panel element". but does not recite where it is measured from. Since step 3 recites "a data file having reference coordinates of at least one multi-layered circuit panel work location and having reference coordinates of said fiducial marks", it appears that the location of the fiducial marks relative to a coordinate system is already known, so that step 5 would be superfluous and possibly contradictory to step 3.

Appropriate correction and clarification is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Frey (5691909).

This rejection is made to the extent that the claims are understood by addressing limitations, which were understood and were consistent with the objectives.

Frey discloses a method for virtual machining of any type of part. From line 62 in column 4 to line 4 in column 5 and on lines 55 to 64 in column 5, Frey teaches the use of the HTM mathematical model to determine the location and accuracy of points on a work piece relative to the position of the tool.

On lines 5 to 21 in column 5, Frey teaches using the error to determine the position of the tool with respect to the work piece.

On lines 46 to 54 in column 13, Frey teaches the use of the model to consider distortions such as thermal expansions in the part or work piece.

Relevant Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schamber (6683316) discloses a method of integrating inputs from an optical system and a scanning electron microscope using a mathematical model to determine the position of an object relative to given fiducial marks, considering translations, rotations, and distortions.

Coleman (6819974) discloses a system and method of using a measuring probe and a mathematical model to determine positioning errors of a numerically controlled machining system considering translational and rotational errors.

Dong (6901809) discloses a mathematical model and measurement techniques to perform structural stress analysis and determine distortions in a structure due to various stresses.

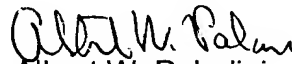
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10. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (571) 272-3748. The examiner can normally be reached from 7:00 to 3:00 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (571) 272-3749. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

July 15, 2005


Albert W. Paladini
Primary Examiner
Art Unit 2125